

In the Claims:

1. (Currently amended) A method for screening test compounds for the ability to modulate nucleotide cyclase activity, comprising:
 - a) providing
 - i) a nucleotide cyclase enzyme;
 - ii) a fluorescently labeled substrate for said nucleotide cyclase enzyme; and
 - iii) one or more test compounds; and
 - b) contacting said nucleotide cyclase enzyme with said fluorescently labeled substrate and said test compound; and
 - c) determining the level of fluorescence of said fluorescently labeled substrate.
2. (Original) The method of Claim 1, further comprising the step of comparing said level of fluorescence of said fluorescently labeled substrate in the presence of said test compound to the level of said fluorescence in the absence of said test compound.
3. (Currently amended) The method of Claim 21, wherein said level of fluorescence is increased in the presence of said test compound relative to in the absence of said test compound.
4. (Original) The method of Claim 1, wherein said nucleotide cyclase enzyme is a guanylyl cyclase.
5. (Original) The method of Claim 1, wherein said nucleotide cyclase enzyme is an adenylyl cyclase enzyme.
6. (Original) The method of Claim 1, wherein said cyclase is a soluble cyclase.

7. (Original) The method of Claim 1, wherein said nucleotide cyclase enzyme is an orphan receptor.

8. (Original) The method of Claim 1, wherein said fluorescently labeled substrate is fluorescently labeled GTP γ S.

9. (Original) The method of Claim 1, further comprising the step of providing an activator of said nucleotide cyclase.

10. (Original) The method of Claim 1, wherein said nucleotide cyclase is a VC1-ACGC mutant of type II adenylyl cyclase.

11. (Original) The method of Claim 1, wherein said method is a high-throughput method.

12. (Currently amended) The method of Claim 1, wherein said test compound is a suspected of being a ligand of said nucleotide cyclase enzyme.

13. (Currently amended) The method of Claim 1, wherein said test compound is a suspected of being an activator of said nucleotide cyclase enzyme.

14. (Currently amended) The method of Claim 1, wherein said test compound is a suspected of being an inhibitor of said nucleotide cyclase enzyme.

15. (Original) The method of Claim 1, wherein said nucleotide cyclase enzyme is membrane bound.

16-20. (canceled)